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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,022	01/11/2001	Paola Carrai	IT 000001	2188

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EXAMINER

MCCARTNEY, LINZY T

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 09/15/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/759,022	CARRAI ET AL.
Examiner	Art Unit	
Linzy McCartney	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 June 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-8 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 11 January 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,067,070 to Suzuki et al. (Suzuki).

a. Referring to claim 1, Suzuki discloses detecting text in an image (column 7, lines 53-57); and scaling the image to adjust first numbers of pixels per line and lines per image of the image to second numbers of pixels per line and lines per image that fit with a display on which the image is to be displayed (column 7, line 58 – column 8, line 58); and discloses processing the image after having been scaled in dependence on a result of the text detecting step (column 9, lines 51-61; Fig. 1).

b. Referring to claim 7, Suzuki discloses a device for text improvement (Fig. 2) including means for detecting text in an image (column 7, lines 53-57); and means for scaling the image to adjust first numbers of pixels per line and lines per image of the image to second numbers of pixels per line and lines per image that fit with a display on which the image is to be displayed (column 7, line 58 – column 8, line 58); and discloses means for processing the image after having been scaled in dependence on a result of the text detecting step (column 9, lines 51-61; Fig. 1)

c. Referring to claim 8, Suzuki discloses a device for text improvement as claimed in claim 7 (see rejection of claim 7 above) and a display (Figure 2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 further in view of U.S. Patent No. 5,956,468 to Ancin

a. Referring to claim 2, the method of Suzuki as applied to claim 1 above meets the limitations recited claim 2 except Suzuki does not explicitly disclose wherein the detecting step comprises setting a background color to white and a text color to black, and the processing step comprises the step of setting white back to the background color and black back to the text color. Ancin discloses the detecting step comprises setting a background color to white and a text color to black (column 11, lines 26-28) and the processing step comprises setting white back to the background color and black back to the text color (Abstract). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the method of Suzuki by having the detecting step comprise setting a background color to white and a text color to black, and the processing step comprise the step of setting white back to the background color and black back to the text color Ancin. The suggestion/motivation for doing so would have

been to produce a mixed color document with clear, sharp text characters in the text region of the document and relatively high quality images in the image region of the document (Patent No. 5956468, column 1, lines 25-28).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 above further in view of U.S. Patent No. 6,038,340 to Ancin et al. (Ancin) further in view of U.S. Patent No. 5,956,468 to Ancin.

a. Referring to claim 3, the method of Suzuki as applied to claim 1 above meets the limitations recited in claim 3 except Suzuki does not explicitly teach the step of determining whether a number of picture units of the text color is fewer than a number of picture units of the background color. Ancin discloses determining whether a number of picture units of the text color is fewer than a number of picture units of the background color (column 1, lines 61-66). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the method of Suzuki to determine whether a number of picture units of the text color is fewer than a number of picture units of the background color as taught by Ancin. The suggestion/motivation for doing so would have been to determine whether the image block contains a sufficient number of black and white pixels to classify the block as having relatively black text on a relatively white background (Ancin, column 1, lines 60-66) which determines the type of processing to be performed on the image (Patent No. 5956468, column 12, lines 52-62 and Fig. 4).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 above and further in view of U.S. Patent No. 6,148,102 to Stolin.

a. Referring to claim 4, the method of Suzuki as applied to claim 1 above meets the limitations recited in claim 4 except Suzuki does not explicitly disclose the step of determining a region for which it holds that the number of colors does not exceed 2. Stolin discloses the aforementioned limitation (column 1, lines 29-33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the disclosure of Suzuki by determining a region for which it holds that the number of colors does not exceed 2 as taught by Stolin. The suggestion/motivation for doing so would have been to recognize text characters in a multicolor image (Stolin, column 2, lines 10-15).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 above in view of W.W. Cindy Jiang, "Thresholding and Enhancement of Text Images for Character Recognition" (Jiang) further in view of U.S. Patent No. 5,781,658 to O'Gorman.

a. Referring to claim 5, the method of Suzuki as applied to claim 1 above meets the limitations recited in claim 5 except Suzuki does not explicitly disclose subjecting a scaled image to a thresholding operation. Jiang discloses the aforementioned limitation (page 2395, column 2, paragraph 7). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the method of Suzuki by subjecting a scale image to a thresholding operation as taught by Jiang. The suggestion/motivation for doing so would have been because thresholding can realize an

image that can be efficiently stored for future access and reading (O'Gorman, column 1, lines 61-63).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki as applied to claim 1 above further in view of Jiang.

a. Referring to claim 6, the method of Suzuki as applied to claim 1 above meets the limitations recited in claim 6 except Suzuki does not explicitly disclose the step of subjecting the scaled image to a morphological filtering. Jiang discloses the aforementioned limitation (page 2396, column 1, paragraph 2). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the method of Suzuki by subjecting the scaled image to a morphological filtering as taught by Jiang. The suggestion\motivation would have been to smooth character boundaries (Jiang, page 2396, column 1, paragraph 2).

Response to Arguments

Applicant's arguments filed on June 18 2003 have been fully considered but they are not persuasive. Applicant argues that Suzuki fails to teach scaling the entire signal after detection of the text regions and the post processing the scaled signal in dependence on the previously detected text regions. The Examiner notes that Suzuki clearly discloses both scaling the entire signal (column 7, line 58 – column 8, line 58; Fig. 1) and processing the image after having been scaled in dependence on a result of the text detecting step (column 9, lines 51-61; Fig. 1). Applicant also argues that Ancin fails to show or suggest changing the text to black in black and the background to white in a pre-scaling step and returning the text and background colors to their previous colors in a

post-scaling step. However, note that Ancin discloses changing the text to black in black and the background to white using a low resolution preview document (column 10, lines 39-43; column 11, lines 16-25) and returns the text and background colors to their previous colors in a post-scaling step on a high resolution version of the same document (column 10, lines 48-50; column 11; lines 41-45; column 18, lines 7-41). .

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5: 30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose
telephone number is (703) 306-0377.

ltm
September 2, 2003



MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600